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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/551,408

02/24/2006

Yoshihiro Ito

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EXAMINER

BASS, DIRK R

ART UNIT

PAPER NUMBER

1777

NOTIFICATION DATE

DELIVERY MODE

02/08/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/551,408	Applicant(s) ITO ET AL.	
	Examiner DIRK BASS	Art Unit 1777	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on November 30, 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12,23,24,26,36 and 37 is/are pending in the application.
- 4a) Of the above claim(s) 13,14 and 28-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12,23,24,26,36 and 37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/30/10</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's response filed November 30, 2010 is acknowledged. Claims 12, 23, and 26, are amended, claims 13-14 and 28-35 are cancelled, and claims 36-37 are newly added. Claims 12, 23-24, 26, and 36-37 are pending and further considered on the merits.

Response to Amendment

In light of the amendments, the examiner modifies the grounds of rejection set forth in the office action dated August 25, 2009.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. **Claims 12, 23-24, 26, and 36-37** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chappa et al., USPA 2001/0014448 (Chappa) in view of Tanaka et al., US 6706260 (Tanaka).
3. Regarding claim 12, Chappa discloses a method for fixing nucleic acids on a substrate (abstract) comprising coating a substrate with a solution containing a water soluble photoreactive polymer (§ 0032-0033) having at least two photoreactive groups such as phenyl azide (§ 0038), said polymer being electrically neutral as a whole (see § 0031-0033 and Claims 5 and 11), and selectively irradiating said solution with light so as to pattern the region to which said substance is fixed (implicitly disclosed in § 0016 and examples 6 and 25).
4. Chappa does not appear to expressly disclose a polymer comprising units represented by formula I. However, Tanaka discloses the use of polymers such as formula I ('MPC polymer', abstract) since such polymers structurally related to phosphatidylcholine, a major component in biological membranes (col. 1, l. 66 – col. 2, l. 67), are known to be biocompatible and bioselective.
5. At the time of invention, it would have been obvious to modify the method of Chappa to include the MPC polymer of Tanaka in order to provide a biocompatible, stable, and bioselective coating for fixing the biological components disclosed in Chappa.

6. Chappa in view of Tanaka do not appear to expressly disclose the relationship between the number of units of formula I and the number of units of formula II.

However, it would have been obvious to a routineer in the art at the time the invention was made to optimize the relative number of units represented by formulas I and II, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art (MPEP 214.05, Part II, Section B).

7. Regarding claims 23-24, Chappa discloses a method for fixing nucleic acids on a substrate (abstract) comprising coating a substrate with a solution containing a nonionic naturally occurring water soluble photoreactive polymer (§ 0032-0033) having at least two photoreactive groups (§ 0038) said polymer being electrically neutral as a whole (see § 0031-0033 and Claims 5 and 11), and selectively irradiating said solution with light (§ 0016 and examples 6 and 25).

8. Regarding claim 26, Chappa discloses a process of producing a coated substrate (abstract) comprising coating a substrate with a solution containing a water soluble naturally occurring nonionic photoreactive polymer (§ 0032-0033) having at least two photoreactive groups such as phenyl azide (§ 0038), said polymer being electrically neutral as a whole (see § 0031-0033 and Claims 5 and 11), and selectively irradiating said solution with light so as to pattern the region to which said substance is fixed (implicitly disclosed in § 0016 and examples 6 and 25).

9. Regarding claim 36, Chappa does not explicitly disclose a method where the water soluble nonionic polymer comprises polyethylene glycol monomethacrylate photoreactive acrylamide. However, Tanaka discloses using a photoreactive polymer backbone comprising polyethylene glycol monomethacrylate photoreactive acrylamide (C5/L51-63). Therefore, at the time of invention it would have been obvious to one having ordinary skill in the art to modify the method of Chappa to include the polymeric constituent of Tanaka since it has been shown that such polymeric backbones are effective in producing macromolecules suitable for coating substrates.

10. Regarding claim 37, Chappa does not explicitly disclose a method where the water soluble nonionic polymer comprises polyethylene glycol monomethacrylate photoreactive acrylamide. However, Tanaka discloses using a photoreactive polymer

backbone comprising polyethylene glycol monomethacrylate photoreactive acrylamide (C5/L51-63). Therefore, at the time of invention it would have been obvious to one having ordinary skill in the art to modify the method of Chappa to include the polymeric constituent of Tanaka since it has been shown that such polymeric backbones are effective in producing macromolecules suitable for coating substrates.

Response to Arguments

11. Applicant's arguments filed November 30, 2010 have been fully considered but they are not persuasive.
12. As shown above, Chappa in view of Tanaka obviate the elements of the amended claims submitted November 30, 2010.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIRK BASS whose telephone number is (571) 270-7370. The examiner can normally be reached on Mon - Fri (9am-4pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on (571) 272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1777

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Krishnan S Menon/
Primary Examiner, Art Unit 1777

/DRB/
Dirk R. Bass